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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,594	01/16/2001	Hans-Jurgen Hacke	GR 98 P 4137 P	5815

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LERNER AND GREENBERG, P.A.
POST OFFICE BOX 2480
HOLLYWOOD, FL 33022-2480

EXAMINER	
HARAN, JOHN T	
ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 12/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action	Application No.	Applicant(s)	
	09/761,594	HACKE ET AL.	
	Examiner	Art Unit	
	John T. Haran	1733	

--The MAILING DATE of this communication appears on the c ver sheet with the correspond nce address --

THE REPLY FILED 13 November 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2. ☒ The proposed amendment(s) will not be entered because:

   (a) ☒ they raise new issues that would require further consideration and/or search (see NOTE below);

   (b) ☒ they raise the issue of new matter (see Note below);

   (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

   (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: *see attached sheet*.

3. ☒ Applicant's reply has overcome the following rejection(s): none.

4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5. ☐ The a)☐ affidavit, b)☐ exhibit, or c)☐ request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.

6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7. ☒ For purposes of Appeal, the proposed amendment(s) a)☒ will not be entered or b)☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:

   Claim(s) allowed: _____.

   Claim(s) objected to: _____.

   Claim(s) rejected: *1-5, 13-17, and 19-24*.

   Claim(s) withdrawn from consideration: *11,12 and 18*.

8. ☐ The drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.

9. ☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10. ☐ Other: _____

Response to Amendment

The after final amendment filed on 11/13/03 has not been entered because it raised new issues that require further search and/or consideration. Amending claims 1 and 3 to say "a desired level of mechanical decoupling" raises new issues because the amendment is an incomplete response to the 35 USC 112, second paragraph indefiniteness rejection of the final office action mailed on 8/19/03. In particular it was noted that "if 'desired' means a specific degree of mechanical decoupling then how is the degree of decoupling determined?" Requiring a desired level raises new issues because it is unclear how the desired level is determined or what constitutes a desired level. Additionally requiring "a desired level of mechanical decoupling" raises the issue of new matter. The specification refers to having a comparatively good mechanical decoupling in comparison to the prior art, but there appears to be no mention of or support for a "desired level of mechanical decoupling".

Response to Arguments

Applicant's arguments filed 11/13/03 have been fully considered but they are not persuasive.

As noted previously claims 1 and 3 do not actually require the semiconductor component to be soldered to the printed circuit board and have the desired mechanical decoupling, but rather require that the semiconductor component be capable of being soldered to a printed circuit board and being mechanically decoupled upon the soldering operation. The product of Akagawa et al, as modified, is capable of being soldered to a printed circuit board, in light of the fact that the small balls have an outer coating of

solder. Furthermore, the product of Akagawa, as modified, has the claimed properties of the second insulation layer, the conductive adhesive, and the small balls and whether specifically selected for achieving mechanical decoupling or not, one skilled in the art would have readily appreciated that only the expected results would be achieved upon soldering the component to a printed circuit board, i.e. that there will be the desired mechanical decoupling.

Applicant teaches that a comparatively good mechanical decoupling in comparison to the prior art (Akagawa) is achieved through having plastic balls coated in solder because they have greater elasticity than the solder balls of the prior art (Akagawa) and through connecting the balls to the device with conductive adhesive because it has greater elasticity than the reflown solder utilized in the prior art (Akagawa). Applicant also teaches that having the second insulation layer thicker than the first insulation layer contributes to the comparatively good mechanical decoupling.

There is ample motivation to modify Akagawa with the teachings of Farnworth, Akram, and the IBM Technical Bulletin to use plastic balls coated with solder instead of solder balls and to connect the balls to the base region with conductive adhesive rather than through the reflow of solder. Also Akagawa teaches the second insulation layer is thicker than the first insulation layer. While the motivation for modifying Akagawa is not to improve mechanical decoupling upon connection of the device to a printed circuit board, the process and product of Akagawa, as modified, teaches having a second insulation layer thicker than the first insulation layer, having plastic balls coated with solder, and using conductive adhesive as the conductive material, just as applicant.

One skilled in the art would have readily appreciated that only the expected results would be achieved through soldering the device to a printed circuit board, namely the desired mechanical decoupling.

Applicant's argument that the combination of references does not establish a prima facie case of obviousness is unpersuasive because as noted above, there is ample motivation to combine the references and more than a reasonable expectation of success of combining the teachings of the references, and as noted above all the claimed limitations are met, including the capability of desired mechanical decoupling, since applicant and Akagawa, as modified, have the same properties identified by applicant to achieve the capability of the desired mechanical decoupling. Additionally, the functional features have been given the appropriate patentable weight and are considered met since as noted above, applicant and Akagawa, as modified, have the same properties identified by applicant to achieve the desired mechanical decoupling capability.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John T. Haran** whose telephone number is **(703) 305-0052 or (571) 272-1217 as of 12/19/03**. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (703) 308-3853. The fax phone

number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

John T. Haran

JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300